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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/627,190	07/27/2000	Srihari Adireddy	US 000064	1208
24737	7590	11/09/2005	EXAMINER	
PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510			WILLIAMS, LAWRENCE B	
			ART UNIT	PAPER NUMBER
			2638	

DATE MAILED: 11/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

X

Office Action Summary	Application No. 09/627,190	Applicant(s) ADIREDDY ET AL.	
	Examiner Lawrence B Williams	Art Unit 2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed on 22 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-9,12-17 and 19-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-9,12-17 and 19-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 5, 9, 13 and 21 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1, 4, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Chan et al. (US Patent 5,127,051).

(1) With regard to claim 1, Chan et al. discloses in Fig. 2, a transmitter (15) for transmitting a stream of known symbols and unknown symbols through a transmission channel to a first receiver that receives the transmitted stream of known symbols and unknown symbols (col. 6, lines 26-29) distorted by intersymbol interference (ISI) and reduces therein an ISI signal (col. 1, lines 40-43), wherein the transmitter comprises: a known symbol distribution controller (11b) capable of inserting a plurality of known symbol clusters into an outgoing stream of unknown symbols in an optimum distribution in order to improve the performance of the first receiver (col. 5, lines 17-49); wherein however disclose wherein said known symbol distribution controller is capable of determining a channel order, L, associated with the receiver; and wherein said known symbol distribution controller determines the optimum distribution according to a

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value of the channel order (col. 8, lines 21-65). Chan et al. discloses his channel order based upon the expected multipath delay. Chan et al. also discloses the number of symbols chosen depends upon the channel characteristics (channel order, L) and specific applications (col. 8, lines 49-55).

(2) With regard to claim 4, claim 4 inherits all limitations of claim 1 above. Furthermore, Chan et al. also discloses wherein the known symbol distribution controller determines a minimum size of each of the plurality of known symbol clusters according to the value of the channel order. Chan et al. discloses the number of symbols used dependant upon channel characteristics and specific applications and that the number of symbols can vary from several symbols to several thousand symbols. The minimum size (several symbols) would be associated with the channel with the best channel characteristics or least multipath dispersion delay (channel order, L, col. 8, lines 48-65).

(3) With regard to claim 21, claim 21 inherits all limitations of claim 1 above. Furthermore, Chan et al. also discloses wherein the known symbol distribution controller is capable of inserting the plurality of known symbol clusters into a plurality of positions in the outgoing stream of unknown symbols (col. 8, lines 21-17; lines 42-44).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9, 12, 17, 22-25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chan et al. (US Patent 5,127,051).

(1) With regard to claim 9, Chan et al. discloses a network comprising a receiver, wherein each receiver receives from a transmission channel an incoming stream of known symbols and unknown symbols (col. 6, lines 26-29) distorted by intersymbol interference (ISI), and wherein each receiver comprises a block decision feedback equalizer (Fig. 8, elements 34, 44) capable of receiving the transmitted stream of known symbols and unknown symbols distorted by intersymbol interference (ISI) and reducing therein an ISI signal (col. 1, lines 40-43). Though Chan et al. does not disclose a plurality of receivers, adding additional receivers would simply be a modification of Chan et al.'s invention and would be considered within the scope of the invention as claimed (col. 14, line 64-col. 15, line 2). Chan et al. also discloses a transmitter (Fig. 2, element 15) for transmitting a stream of known symbols and unknown symbols through a transmission channel to a first receiver, wherein the transmitter comprises: a known symbol distribution controller (Fig. 2, element 11b) capable of inserting a plurality of known symbol clusters into an outgoing stream of unknown symbols in an optimum distribution in order to improve the performance of the first receiver (col. 5, lines 17-49); wherein said known symbol distribution controller is capable of determining a channel order, L , associated with the receiver; and wherein said known symbol distribution controller determines the optimum distribution according to a value of the channel order (col. 8, lines 21-65). Chan et al. discloses his channel order based upon the expected multipath delay. Chan et al. also discloses the number of symbols chosen depends upon the channel characteristics (channel order, L) and specific applications (col. 8, lines 49-55).

(2) With regard to claim 12, claim 12 inherits all limitations of claim 9 above.

Furthermore, Chan et al. also discloses wherein the known symbol distribution controller determines a minimum size of each of the plurality of known symbol clusters according to the value of the channel order. Chan et al. discloses the number of symbols used dependant upon channel characteristics and specific applications and that the number of symbols can vary from several symbols to several thousand symbols. The minimum size (several symbols) would be associated with the channel with the best channel characteristics or least multipath dispersion delay (channel order, L, col. 8, lines 48-65).

(3) With regard to claim 17, Chan et al. discloses a network comprising a transmitter and receiver, wherein each receiver receives from a transmission channel an incoming stream of known symbols and unknown symbols (col. 6, lines 26-29) distorted by intersymbol interference (ISI), and wherein each receiver comprises a block decision feedback equalizer (Fig. 8, elements 34, 44) capable of receiving the transmitted stream of known symbols and unknown symbols distorted by intersymbol interference (ISI) and reducing therein an ISI signal (col. 1, lines 40-43). Though Chan et al. does not disclose a plurality of receivers, adding additional receivers would simply be a modification of Chan et al.'s invention and would be considered within the scope of the invention as claimed (col. 14, line 64 - col. 15, line 2). Chan et al. also discloses a method of transmitting the known and unknown symbols comprising the steps of: inserting a plurality of known symbol clusters into an outgoing stream of unknown symbols in an optimum distribution in capable of improving the performance of a first one of the receivers (col. 5, lines 17-49); transmitting the stream of known and unknown symbols according to the optimum distribution (col. 7, lines 20-27); determining a plurality of channel orders, L_1 , - L_n wherein each

channel order is associated with a corresponding one of said plurality of receivers. Again Chan et al. does not disclose a plurality of receivers, but does disclose the number of symbols chosen depends upon the channel characteristics (channel order, L) and specific applications and that the number of symbols used varies from several symbols to several thousand symbols (col. 8, lines 48-65). Such disclosure signifies multiple channel characteristics (channel orders, L) being determined, which could be associated with different receivers having different channel characteristics which would simply be a modification of Chan et al.'s invention and would be considered within the scope of the invention as claimed (col. 14, line 64-col. 15, line 2); and determining a maximum one of the plurality of channel orders (col. 8, lines 48-65). Chan et al. discloses wherein the known symbol distribution controller is capable of determining a maximum one of the plurality of channel orders. Chan et al. discloses the numbers of symbols chosen varying up to several thousand dependent upon channel characteristics (channel order, L) and specific application. The maximum number of symbols used would be for the channel with poorest channel characteristic or maximum multipath dispersion delay. It would be inherent that the maximum one of the channel orders would have to be determined in order to use the maximum amount of symbols.

(4) With regard to claim 22, claim 22 inherits all limitations of claim 9 above.

Furthermore, Chan et al. also discloses wherein the known symbol distribution controller is capable of inserting the plurality of known symbol clusters into a plurality of positions in the outgoing stream of unknown symbols (col. 8, lines 21-17; lines 42-44).

(5) With regard to claim 23, claim 23 inherits all limitations of claim 22 above. As noted above Chan et al. discloses all limitations of claim 22 above. Furthermore, Chan et al. also

discloses wherein the known symbol distribution controller determines a minimum size of each of the plurality of known symbol clusters according to the value of the channel order. Chan et al. discloses the number of symbols used dependant upon channel characteristics and specific applications and that the number of symbols can vary from several symbols to several thousand symbols. The minimum size (several symbols) would be associated with the channel with the best channel characteristics or least multipath dispersion delay (channel order, L, col. 8, lines 48-65).

(6) With regard to claim 24, claim 24 inherits all limitations of claim 17 above. As noted above, Chan et al. discloses all limitations of claim 17, above. Furthermore, Chan et al. also discloses wherein the known symbol distribution controller is capable of inserting the plurality of known symbol clusters into a plurality of positions in the outgoing stream of unknown symbols (col. 8, lines 21-17; lines 42 - 44).

(7) With regard to claim 25, claim 25 inherits all limitations of claim 17 above. As noted above, Chan et al. discloses all limitations of claim 17 above. Furthermore, Chan et al. also discloses wherein the known symbol distribution controller is capable of determining a maximum one of the plurality of channel orders. Chan et al. discloses the numbers of symbols chosen varying up to several thousand dependent upon channel characteristics (channel order, L) and specific application. The maximum number of symbols used would be for the channel with poorest channel characteristic or maximum multipath dispersion delay. It would be inherent that the maximum one of the channel orders would have to be determined in order to use the maximum amount of symbols (col. 8, lines 48-65).

6. Claims 5-8, 13-16, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al. (US Patent 5,127,051) as applied to claims 1, 9, and 17 above, and further in view of Stuart (US Patent 4,489,416).

(1) With regard to claim 5, claim 5 inherits all limitations of claim 1 above. As noted above, Chan et al. discloses all limitations of claim 1. Chan et al. does not explicitly disclose wherein the transmitted stream of known symbols and unknown symbols is received by a plurality of receivers and wherein the known symbol distribution controller is capable of determining a plurality of channel orders, L_1 through L_n , wherein each channel order is associated with a corresponding one of said plurality of receivers. Though Chan et al. does not disclose a plurality of receivers, but does disclose the number of symbols chosen depends upon the channel characteristics (channel order, L) and specific applications and that the number of symbols used varies from several symbols to several thousand symbols (col. 8, lines 48-65). Such disclosure signifies multiple channel characteristics (channel orders, L) being determined, which could be associated with different receivers having different channel characteristics which would simply be a modification of Chan et al.'s invention and would be considered within the scope of the invention as claimed (col. 14, line 64-col. 15, line 2).

However, Stuart discloses in Fig. 3, wherein a transmitted stream of known symbols is received by a plurality of receivers and an equalizer determines a plurality of channel orders (col. 4, lines 21-26), L_1 through L_n , wherein each channel order is associated with a corresponding one of said plurality of receivers (col. 4, lines 44-46).

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Stuart with the invention of Chan et al as a method of reducing complexity and expense of operating a central modem station (col. 2, lines 31-46).

(2) With regard to claim 6, claim 6 inherits all limitations of claim 5 above. As noted above Chan et al. discloses all limitations of claim 5 above. Furthermore, Chan et al. also discloses wherein the known symbol distribution controller is capable of determining a maximum one of the plurality of channel orders. Chan et al. discloses the numbers of symbols chosen varying up to several thousand dependent upon channel characteristics (channel order, L) and specific application. The maximum number of symbols used would be for the channel with poorest channel characteristic or maximum multipath dispersion delay. It would be inherent that the maximum one of the channel orders would have to be determined in order to use the maximum amount of symbols (col. 8, lines 48-65).

(3) With regard to claim 7, Chan et al. also discloses wherein said known symbol distribution controller determines the optimum distribution according to a value of the maximum channel order (col. 6, lines 58-53; col. 8, lines 48-53). Chan et al. discloses in the two cited passages, distributing the symbols of any chosen length by spreading and/or hopping over a plurality of frequencies dependent upon application, transmission type and communication channel used. Chan et al. also discloses the number of symbols used based upon channel characteristics (channel order, L).

(4) With regard to claim 8, Chan et al. also discloses wherein the known symbol distribution controller determines a minimum size of each of the plurality of known symbol clusters transmitted to all of the plurality of receivers according to the value of the maximum

channel order (col. 8, lines 48-53). Chan discloses the use of several symbols to several thousand symbols dependent upon channel characteristics (channel order). The several symbols would inherently correspond to good channel characteristics, ie high SNR or SIR (maximum channel order).

(5) With regard to claim 13, claim 13 discloses limitations similar to those disclosed in claim 5, therefore a similar rejection applies.

(6) With regard to claim 14, claim 14 discloses limitations similar to those disclosed in claim 6, therefore a similar rejection applies.

(7) With regard to claim 15, claim 15 discloses limitations similar to those disclosed in claim 7, therefore a similar rejection applies.

(8) With regard to claim 16, claim 16 discloses limitations similar to those disclosed in claim 8, therefore a similar rejection applies.

(9) With regard to claim 19, claim discloses limitations similar to those disclosed in claims 7, and 15, therefore a similar rejection applies.

(10) With regard to claim 20, claim discloses limitations similar to those disclosed in claims 8, and 16, therefore a similar rejection applies.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

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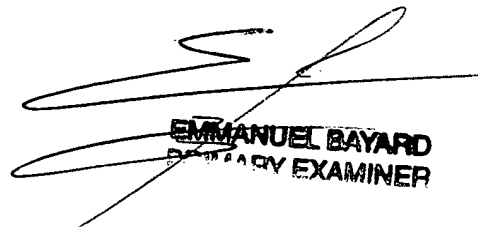
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw

November 3, 2005



EMMANUEL BAYARD
PRIMARY EXAMINER